The rejection of Claims 1, 2, 4-6 14 and 16 under 35 U.S.C. §103 as being unpatentable over Calviello in view of Ramesh, Joshi and Mannhart is traversed. The only reference applied that shows the use of Nb is Mannhart. Mannhart uses Nb as a dopant for STO to make STO conductive in anticipation of the formulation of an overlying superconductive element. See, for example, column 8, lines 30-32 and column 9, lines 7-15 of the reference. Mannhart teaches quite clearly that Nb-doped STO is functionally completely different from undoped STO, undoped STO being an insulating material. In fact, Mannhart uses individual layers of Nb-doped STO and insulating, undoped STO in the same device for different purposes. (Column 8, lines 30-33).

Why would one of ordinary skill in the art substitute Nb-doped STO for undoped STO in the remaining references? All of Calviello, Joshi and Ramesh use undoped layers, and where these references arguably disclose layers that can be compared with the presently claimed monocrystalline accommodating buffer layer, they at best suggest essentially the swapping of alternate materials (e.g., see Figures 2, 4, etc. of Calviello) or a change in composition achieved via a gradient, (see, e.g., Figure 3 of Calviello). Where undoped material is described in all of Calviello, Ramesh and Joshi it is undoped for a reason, as dictated by the structure described and its ultimate function.

Mannhart clearly teaches the very different electrical properties of, e.g., Nb doped-STO and undoped STO (i.e., insulating v. non-insulating). It is thus not fair to say that one of ordinary skill in the art, looking at the four assembled references, would have substituted Nb doping in a layer where undoped material is originally described, given the rather drastic change in properties that such doping would effect. For example, in Figure 1 of Calviello the substitution of Nb-doped STO would change buffer layer 14 from insulating STO to a very functionally different material. See column 2, line 58 of Calviello. While Calviello suggests

layer alternation and gradient change, doping is not suggested, nor is it suggested that the layer be changed from insulating to conducting. The same is true for Ramesh and Joshi.

Accordingly, and for the reasons presented above, Applicants respectfully submit that even the combination of the four applied references fails to disclose or suggest the presently claimed invention, and the reconsideration and withdrawal of the outstanding rejection is requested. Applicants would again like to thank Examiner Wille for the indication of allowable subject matter herein, and submit that the application is now in condition for allowance.

Respectfully submitted,

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